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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,573	12/12/2005	Theodore Letavic	US03 0162 US2	6633

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EXAMINER	
KEBEDE, BROOK	

ART UNIT	PAPER NUMBER
2894	

NOTIFICATION DATE	DELIVERY MODE
10/07/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/560,573	LETAVIC, THEODORE	
	Examiner	Art Unit	
	Brook Kebede	2894	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 12-19* is/are pending in the application.

4a) Of the above claim(s) *18* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-3,12-17 and 19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's argument with respect withdrawal of claims 15-17 and 19 in the previous Office action on the ground election by original presentation is noted. The argument found persuasive and the restriction of claims 15-17 and 19 has been withdrawn by the Examiner. Accordingly, claims 15-17 and 19 are treated on the merit among other pending claims herein below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 15-17 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Krivokapic et al. (US 6,605,843).

Re claim 1, Krivokapic et al. disclose a thin film Silicon on Insulator (SOI) device comprising: a source (12); a gate (34); a drain (14) ; an SOI layer (26) ; a substrate layer (24), wherein when the substrate layer (24) is maintained at a potential sufficiently lower than a potential of the source a parasitic MOS channel is formed between the source and drain; and a Deep N implant layer (not shown) formed between either the source (12) or drain (14 and the SOI (26) layer to prevent flow of current between the source and drain via the parasitic MOS

channel when the device is in an off state (see Figs. 1-3j and related text in Col. 1, line 14 - Col., line 23).

Re claim 2, as applied to claim 1 above, Krivokapic et al. disclose all the claimed limitation including wherein the Deep N implant layer is formed between the source and the SOI layer (see Figs. 1-3j and related text in Col. 1, line 14 - Col., line 23).

Re claim 3, as applied to claim 1 above, Krivokapic et al. disclose all the claimed limitation including wherein the Deep N implant layer is formed between the drain and the SOI insulator layer ((see Figs. 1-3j and related text in Col. 1, line 14 - Col., line 23).

Re claim 15, Krivokapic et al. disclose a thin film Silicon on Insulator (SOI) device comprising: a source (12) and a drain (14) ; a gate (34) between the source (12) and the drain (14) to control on and off states of the device; a substrate layer (24); a deep implant layer (not shown) adjacent to either the source or the drain; and an SOI layer (26) disposed between the substrate layer and the deep implant layer (not shown), wherein when the substrate layer is maintained at a potential sufficiently different than a potential of the source, a parasitic MOS channel is formed between the source and drain, and wherein the deep implant layer prevents flow of current between the source and drain via the parasitic MOS channel when the device is in an off state (see Figs. 1-3j and related text in Col. 1, line 14 - Col., line 23).

Re claim 16, as applied to claim 15 above, Krivokapic et al. disclose all the claimed limitation including wherein the deep implant layer is formed between the source and the SOI layer.

Re claim 17, as applied to claim 15 above, Krivokapic et al. disclose all the claimed limitation including wherein the deep implant layer is formed between the drain and the SOI layer (see Figs. 1-3j and related text in Col. 1, line 14 - Col., line 23).

Re claim 19, as applied to claim 15 above, Krivokapic et al. disclose all the claimed limitation including wherein the deep implant layer is a Deep N implant layer (see Figs. 1-3j and related text in Col. 1, line 14 - Col., line 23).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krivokapic et al. (US 6,605,843).

Re claim 12, as applied to claim 1 in Paragraph 3 above, Krivokapic et al. discloses all the claimed limitations including maintaining the source potential greater than the substrate potential (i.e., it is standard PMOS transistor operation that PN junction is biased in a forward direction, the threshold voltage is lowered, and the operation is accelerated when the substrate potential is lower than the source potential).

Furthermore, the claimed voltage can be routinely adjusted by routine optimization in order to efficiently operate the device.

One of ordinary skill in the art would have been motivated to optimize the claimed voltage range by using routine experimentation in order to efficiently operate the device.

Therefore, it would have been to one having ordinary skill in the art at the time of the invention is made to optimize the claimed voltage range, since it has been held where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). Furthermore, the specification contains no disclosure of either the critical nature of the claimed voltage value or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. See *In re Woodruff*, 919, f.2d 1575, 1578, 16 USPQ2d, 1936 (Fed. Cir. 1990).

Re claim 13, as applied to claim 1 in Paragraph 3 above, Krivokapic et al. disclose all the claimed limitations including the SOI layer having predetermined thickness.

Furthermore the claimed thickness range can be achieved by routine optimization in order to achieve the desired device performance and size.

Notwithstanding, one of ordinary skill in the art would have been led to the recited dimensions through routine experimentation and optimization. Applicant has not disclosed that the dimensions are for a particular unobvious purpose, produce an unexpected result, or are

otherwise critical, and it appears prima facie that the process would possess utility using another dimension. Indeed, it has been held that mere dimensional limitations are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Re claim 14, applied to claim 1 in Paragraph 3 above, Krivokapic et al. disclose all the claimed limitations including wherein the Deep N implant layer has a doping concentration about predetermined order of magnitude higher than that of a gate region associated with the gate.

Furthermore, the claimed concentration can be set by routine optimization in order to a achieve the desired implant depth and impurity level.

Therefore, it would have been to one having ordinary skill in the art at the time of the invention is made to optimize the claimed implant concentration range, since it has been held where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989); *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). Furthermore, the specification contains no disclosure of either the critical nature of the claimed

concentration range or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. See *In re Woodruff*, 919, f.2d 1575, 1578, 16 USPQ2d, 1936 (Fed. Cir. 1990).

Response to Arguments

6. Applicant's arguments with respect to claims 1-3, 12-17 and 19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. **THIS ACTION IS MADE NON-FINAL.**

Correspondence

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly D. Nguyen can be reached on (571) 272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brook Kebede/
Primary Examiner, Art Unit 2894

/BK/
September 30, 2008